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NRO REVIEW  
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TAB A

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UTILIZATION OF AERIAL RECONNAISSANCE TO DETERMINE THE STATUS  
OF THE SOVIET ICBM THREAT

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Other collection sources, including collateral reporting, [ ]  
[ ] have failed to provide positive evidence of Soviet  
ICBM deployment activity. [ ]  
failed to reveal the construction of the new launch area recently  
uncovered in TALENT and also failed to reveal the extensive surface-  
to-air missile site construction program now known to exist in the Urals.  
Despite existing TALENT coverage [ ] on the missile test ranges  
and other areas of the USSR, there has been no reliable indication of the  
existence or probable configuration of Soviet operational launching  
facilities. Even if further TALENT coverage of the two ranges revealed  
the operational site configuration, it would in no way reduce the  
requirement to determine the location and number of operational sites.

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Although covert and other collateral reports on ICBM launch sites  
are numerous, virtually none of these reports is sufficiently reliable  
to provide the principal justification for a TALENT mission. Accordingly,  
any single mission based upon currently available intelligence which has  
as its objective coverage of Soviet ICBM deployment activity must antici-  
pate possible negative findings in view of (a) the tenuous character of  
the intelligence information on which it is based and (b) the unlikelihood

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of chance coverage of a previously unsuspected site location.\*

The application of logic to the problem of Soviet ICBM site selection introduces a variety of factors which we know the Soviets would have had to consider, regardless of mode of deployment: i.e., range to target; geodetic data; vulnerability, detection and security of sites; system logistics, maintenance and communications; climate and weather. We cannot on the basis of available intelligence determine how much weight each of these factors would have had in influencing Soviet decisions on site selection. Thus, in the absence of current conclusive evidence, there appear to be no technical or logical criteria which alone can suffice in predicting precise launching points for Soviet ICBMs.

Although we foresee little likelihood of assuring that positive findings will result from TALENT coverage aimed at individual suspect point targets, we believe that a systematic search program can be devised

\* The problem is exemplified by the negative results of the recent TALENT coverage of a suspected ICBM launch site in the [redacted] area. Inclusion of this area in the mission was based upon a report from a clandestine source of established reliability: [redacted]

[redacted] GENETRIX photography revealing unidentified construction in the area; and other fragmentary evidence relating to military units and communications in the area. While obviously inconclusive, this body of evidence on a single suspect ICBM site was unique with respect to variety and apparent reliability of sources and consistency of information.

which will provide a relatively high assurance of determining the status and scope of the Soviet operational ICBM program. The key to such a search program is the Soviet railroad network, which we believe would play the major logistic role in any large-scale and extensive Soviet ICBM deployment effort. Soviet reliance upon rail transport appears to be the only factor among the multitude of considerations affecting Soviet selection of ICBM sites which can be singled out with a high degree of confidence, irrespective of whether fixed sites or mobile launching units have been chosen as the basic Soviet operational concept. It is highly probable, for example, that fixed sites would be located relatively close to existing rail lines, and that logistic requirements during site construction and after operational activation would be handled primarily by rail. Similarly, in the case of mobile launch units, the missile system would necessarily be rail-mounted, except for a relatively large number of pre-selected launching points, and would be maintained and logistically supported entirely by rail.

The likelihood of Soviet dependence on rail logistics immediately eliminates large areas of the USSR from consideration as probable deployment areas warranting reconnaissance. Since we cannot infer with confidence the intended operational range of the Soviet ICBM from the testing program or other data, we have considered it prudent to assess all rail-served areas of the USSR within 5,500 nm of all principal North

American military and industrial targets as areas which the Soviets might regard as potentially suited for ICBM deployment. The USSR would recognize, however, that substantial advantages accrue from selecting ICBM sites as close to the intended targets as other site selection criteria (e.g., geography, climate, logistics, vulnerability) permit.

The proposed TALENT search for ICBM deployment activity includes six regions of the USSR selected on the basis of the factors which Soviet planners would have had to take into account in reaching their decisions on ICBM site locations. (For detailed discussion, see Annex to Tab A). These regions are outlined on the attached map in schematic fashion to illustrate the most likely general areas of ICBM deployment and are designated in order of probability of selection by the USSR.\* No account has been taken of TALENT operational considerations in defining these regions. The first five priority areas (Regions A-E) are well served by existing rail lines. The sixth area (Region F) is composed of major Soviet air bases on the Northern perimeter and represents the only feasible exception to the rail support premise. Although this region could be supplied by sea and air during the construction and operational phases of ICBM deployment and is within close and demonstrated Soviet ICBM range of US targets, it presents serious disadvantage as the location of the main Soviet deployment effort because of vulnerability, unfavorable

\* Regions A and B have been sub-divided into two zones each, indicating our view of relative priorities within these broad regions.

climate, and logistic and communications problems.

The initial phase of the TALENT search program would be directed toward locating and identifying on the earliest possible mission the first site or group of sites. Success in this respect would immediately provide the basis for a more accurate appraisal than is now possible of the status and probable intent of the Soviet ICBM program. It might also lead to a substantial revision of priorities for further TALENT coverage and would probable reduce considerably the area to be searched before a satisfactory intelligence judgment of Soviet operational capabilities could be made. If, on the other hand, the initial missions failed to disclose ICBM deployment activity in the one or two most likely areas, it would still be necessary to continue the search in other areas before being able to conclude with an acceptable degree of assurance that no Soviet ICBM deployment program of significant proportions was underway. Because at least several missions would probably be required to attain the objectives of the program, it is highly desirable to initiate and carry out the search program as rapidly as possible.

The obvious national security implications of present US uncertainty about Soviet strategic intentions and capabilities, as reflected in the current divergency of opinion within the US intelligence community on the status of the Soviet ICBM program, lends increased urgency to the collection

of reliable evidence, even at considerable risk. Present estimates on the date of availability to the USSR of operational ICBM sites range from early 1959 to late 1960. In the former case, a relatively few launching positions should already be completed and operational, with upwards of 50 launching positions dispersed in anywhere from 10 to 25 or more different complexes in various stages of preparation. By mid-1960, these numbers would be a great deal larger. In the case of an operational capability estimated for late 1960, only a few launching positions would be underway at the present time, possibly at widely separated locations and in early stages of construction. In either case, some activity should already be discernible through photography. Regardless of the current status of Soviet operational ICBM capabilities, the proposed TALENT search program appears to be the only means now available to obtain an early and accurate assessment of the Soviet ICBM threat.

ANNEX TO  
TAB A

FACTORS AFFECTING ICBM DEPLOYMENT IN THE REGIONS

PROPOSED FOR SEARCH

Region A: Priority I

- (1) Distance to Targets: All major US military and industrial targets would be within 5,500 nm range of Soviet ICBM bases located anywhere within this Region. Distance to target diminishes toward the north and about half of the US targets would be within less than 4,500 nm range of bases located in the north along the Pechora or Vologda-Archangel rail lines.
- (2) Vulnerability to Attack: The middle and southern portion of this region are located deep within the USSR and would permit maximum warning time and a defense in depth against attacking enemy weapons whose mission was the destruction of ICBM bases. Vulnerability would increase substantially toward the north.
- (3) Capability for Logistic Support: A large part of this region is serviced by some of the most modern and extensive rail facilities in the USSR. The southern portion of this region encompasses a sizable portion of Soviet industry.
- (4) Available Intelligence Information: The major portion of what little evidence exists concerning Soviet ICBM deployment has concerned portions of this region, i.e., evidence which could equate with ICBM site construction

activity at Polyarnyy Ural and reports of activity at Ust Ukhta and certain points along the Vologda-Archangel railway.

(5) Possibility of Detection by Other Means: The remoteness of much of this region, coupled with stringent Soviet security measures, makes it unlikely that ICBM sites would be detected by conventional Western intelligence collection means.

(6) Geographic, Geodetic and Climate: Except for the northeastern portion, the entire region had been covered by first-order survey as of January 1944. The precise degree to which first-order survey has been extended in this region is not known. However, it is known that Soviet activity in this field has been extensive throughout the USSR, and it is assumed that the majority of this region has probably now been covered. The geologic and geographic features of most of the region present no major obstacles to ICBM deployment, regardless of mode. Weather is frequently severe in much of this region, but this is true for most portions of the USSR which appear likely areas for ICBM deployment.

(7) Communications: Although the northern portion of this region is subject to intermittent radio propagation problems, particularly in the auroral zones, land lines extend throughout the region which would probably be adequate for most communication emergencies.



Region B: Priority II

- (1) Distance to Targets: This region is almost identical to Region A in distance-to-target factors.
- (2) Vulnerability to Attack: Much of this region is located near the western border of the USSR and would be relatively vulnerable to both conventional bomber and missile attack from bases in Western Europe.
- (3) Capability for Logistic Support: This region has the highest density of rail transport facilities in the USSR. Good quality air transport facilities are also available. Logistic support for ICBM sites within this region could be provided by a large number of industrial and service centers.
- (4) Available Intelligence Information: Aside from some tenuous  associations with the test ranges, occasional sightings of LOX carriers singly or in groups, and a variety of low level unconfirmable reports of "rocket bases" in portions of the region, there is no evidence on the existence of missile bases in this region. Interpretation of available information in an ICBM context is made particularly difficult because of the probable deployment of shorter range ballistic missiles in this region.
- (5) Possibility of Detection by Other Means: This region, among those considered, is probably the most susceptible to conventional Western intelligence collection. Much of the region, however, is closed to foreigners, and although there is some foreign travel along many of the

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rail lines and commercial air routes, it is doubtful that detection of ICBM deployment could be assured.

(6) Geographic, Geodetic and Climate: This region has been covered by 1st Order Geodetic Survey. Large areas within the region, however, would be unsuitable for the construction of launch sites due to the presence of marshes. In addition the essential flatness of a large part of terrain would complicate attempts to conceal ICBM deployment. Climate is probably more favorable in this region than in the others.

(7) Communications: Communication facilities are excellent throughout the region.

(8) Relationship to IREB: An important factor which is pertinent to this region and Region E is the possibility of deployment of both ICBMs and IREBs. If the mode of deployment for both weapons were the same, with many elements of systems equipment similar, they might be deployed together and share certain command and support facilities. Information concerning ICBM deployment might also be derived through the analysis of IREB facilities.

#### Region C: Priority III

(1) Distance to Targets: This region, ranks with Region E as being the least favorable from the point of view of distance-to-target. Only a few key targets would be less than 4,500 nm range from bases in this region, and the majority would require 5,000-5,500 nm range.

(2) Vulnerability to Attack: This region is situated well within the

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interior of the USSR, thus permitting maximum warning times and a defense in depth against attacking weapons.

(3) Capability for Logistic Support: The region is served by modern rail facilities. The basic shape of the rail network of the region, however, would mean that logistic lines were somewhat extended and transport would be confined to a few major arteries. There are numerous industrial and support centers within the region.

(4) Available Intelligence Information: There is no direct information which would equate with ICBM deployment activity within this region and there have been very few reports of such.

(5) Possibility of Detection by Other Means: The remoteness of the region coupled with Soviet security measures would given ICBMs deployed in the region a very low susceptibility to detection by conventional collection means.

(6) Geographic, Geodetic and Climate: These factors appear to present no major obstacle to the establishment of ICBM bases within the region.

(7) Communications: There are good communication facilities throughout the region.

#### Region D: Priority IV

(1) Distance to Targets: Almost all major US military and industrial targets would be within 4,000 to 4,500 nm of ICBMs deployed in this region. From the standpoint of only distance-to-target, this region is the most

favorable of those considered on the basis of rail support.

(2) Vulnerability to Attack: The entire region is highly exposed and near a border which does not have a buffer of Soviet-dominated territory. Warning times would be minimum and ICBM bases would appear to be quite vulnerable to attack by both land and sea-based aircraft and missiles. It, with Region E, is the most vulnerable of the regions considered.

(3) Capability for Logistic Support: Rail transport in the region is good, but not as extensive as in the other regions considered.

(4) Available Intelligence Information: There are a variety of low level unconfirmable reports of "rocket sites" in this region. There is, however, no information at present from other sources suggesting unexplained activity is in progress in this region which might equate with ICBM deployment.

(5) Possibility of Detection by Other Means: Although stringent security measures are employed in the region, the visit of foreign nationals on a regular basis to ports, and the location of the region on an exposed border of the USSR, would increase somewhat the possibility of detecting ICBM deployment by conventional Western intelligence collection means, compared to other regions.

(6) Geographic, Geodetic and Climate: The region is generally favorable from the standpoint of these factors.

(7) Communications: There are good communication facilities in the region.

Region E: Priority V

- (1) Distance to Targets: This region ranks with Region C as being the least favorable from the point of view of distance-to-targets. Only a few key targets on the North American continent would be less than 4,500 nm range from bases in this region, and the majority would require 5,000-5,500 nm range. There is an additional factor, however, which justifies the inclusion of this region within the study. The region is well situated for the deployment of ICBM and IRBM sites whose mission would be to destroy US strategic bomber and missile strike capabilities in Alaska, in Japan, in the Ryukyu Islands, and in the central and eastern Pacific areas.
- (2) Vulnerability to Attack: This region is similar to Region D in its vulnerability to attack. Warning times would be minimum and ICBM or IRBM bases would be susceptible to attack by both land and sea based aircraft and missiles.
- (3) Capability for Logistic Support: Rail transport in the region although of good quality is the least extensive of the regions considered. As a region, it is the most distant from probable production centers, of those considered. The industrial base of the region has sufficient capacity to support deployment operations.
- (4) Available Intelligence Information: Aside from several low level reports concerning deployment activities in this region there are two areas worthy of mention: the first area concerns the locations of

Kraskino and Slavyanka at the extreme southern part of the region.

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; the second area concerns

the location of Ippolitovka ( 44 02 N - 132 12 E).

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recently sighted six LOX rail cars, surfaced roads, and military personnel within a maximum security area at this location. The same source also reported seeing two flat cars carrying possible missile containers on a siding at Voroshilov. (See also para. (8) below)

(5) Possibility of Detection by Other Means: The rigid security practices employed by the Soviets in this region coupled with infrequent travel by westerners, sharply reduces the probability of detection by conventional means of ICEM or IREM sites within the region.

(6) Geographic, Geodetic and Climate: This region from the standpoint of these factors is well suited for the deployment of ICEMs or IREMs.

(7) Communications: Communication facilities within the region range from good in the larger industrial and population centers and along main transportation routes to marginal in the more remote areas.

(8) Relationship to IREM: See Sec (1) above and Region B, Sec (8) for discussions of this factor.

#### Region F

This region constitutes what we believe to be the only feasible exception

to the regions chosen on the basis of the factors given above.\* We believe that the only rationale for Soviet deployment of ICBM sites in this region would be a marked limitation in the range of the present Soviet ICBM.

\* For a discussion of the factors governing the inclusion of this region, see page 4 of text.